



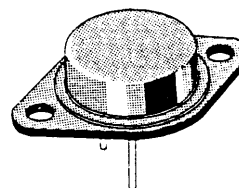
SGS-THOMSON
MICROELECTRONICS

MJ802
MJ4502

COMPLEMENTARY HIGH POWER TRANSISTORS

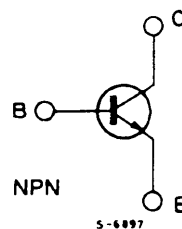
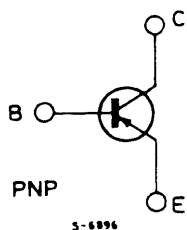
DESCRIPTION

The MJ802 (NPN) and MJ4502 (PNP) are silicon epitaxial-base complementary power transistors in Jedec TO-3 metal case, intended for general purpose power amplifier and switching applications.



TO-3

INTERNAL SCHEMATIC DIAGRAMS



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	90	V
V_{CBO}	Collector-base Voltage ($I_E = 0$)	100	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	4	V
I_C	Collector Current	30	A
I_B	Base Current	7.5	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$	200	W
T_{stg}	Storage Temperature	- 65 to 200	$^\circ C$
T_j	Junction Temperature	200	$^\circ C$

THERMAL DATA

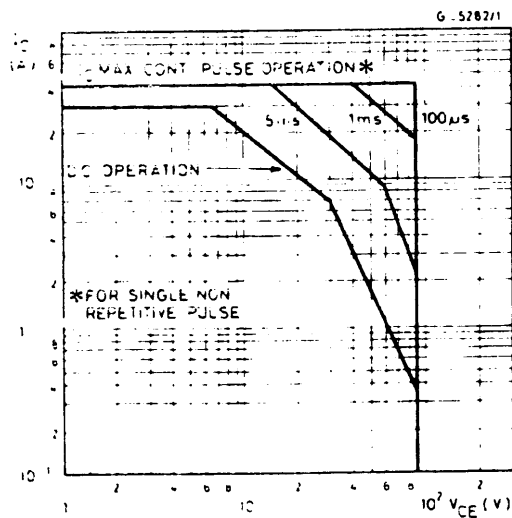
$R_{\theta ja}$	Thermal Resistance Junction-case	Max	0.875	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

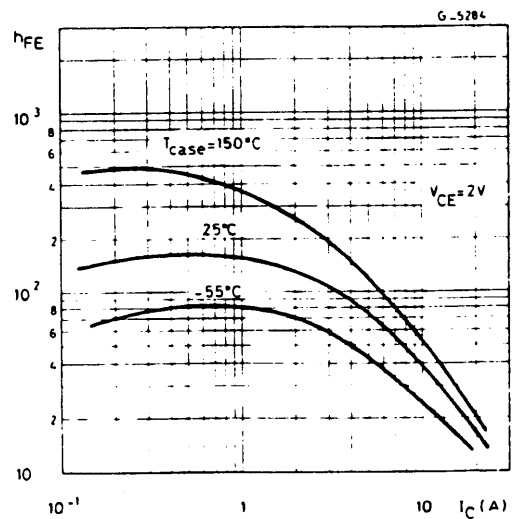
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CE(sat)}$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 200\text{ mA}$	90			V
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 100\text{ V}$ $T_{case} = 150^{\circ}\text{C}$			1 5	mA mA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 4\text{ V}$			1	mA
$V_{CE(sat)}$	Collector-emitter Sustaining Voltage ($R_{BE} = 100\Omega$)	$I_C = 200\text{ mA}$	100			V
h_{FE}	DC Current Gain	$I_C = 7.5\text{ A}$ $V_{CE} = 2\text{ V}$	25		100	
$V_{CE(sat)}$	Collector-emitter Saturation Voltage	$I_C = 7.5\text{ A}$ $I_B = 0.75\text{ A}$			0.8	V
$V_{BE(sat)}$	Base-emitter Saturation Voltage	$I_C = 7.5\text{ A}$ $I_B = 0.75\text{ A}$			1.3	V
V_{BE}	Base-emitter Voltage	$I_C = 7.5\text{ A}$ $V_{CE} = 2\text{ V}$			1.3	V
f_T	Transition Frequency	$I_C = 1\text{ A}$ $f = 1\text{ MHz}$ $V_{CE} = 10\text{ V}$	2			MHz

* Pulsed: pulse duration = 300 μs , duty cycle $\leq 2\%$.
For PNP type voltage and current values are negative.

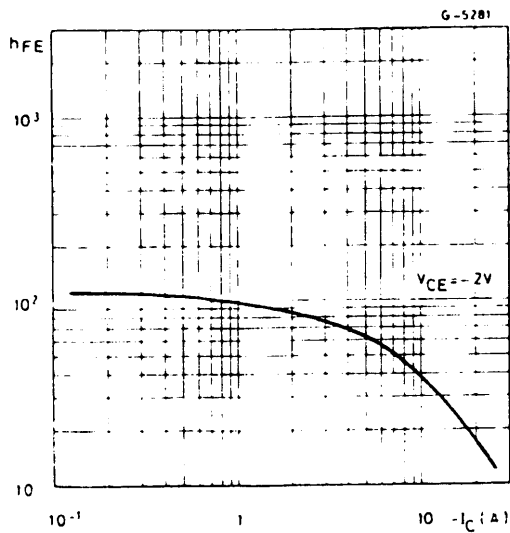
Safe Operating Areas.



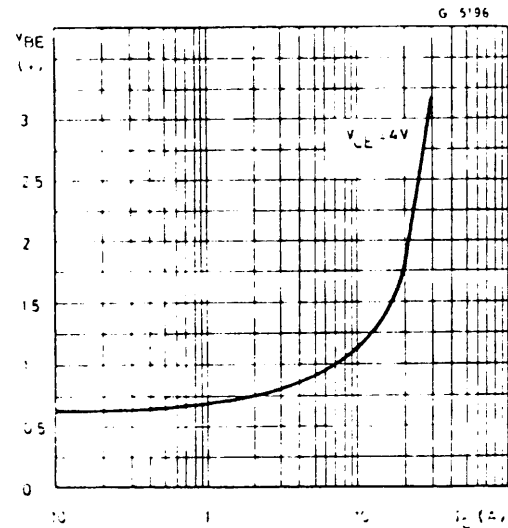
DC Current Gain (NPN type).



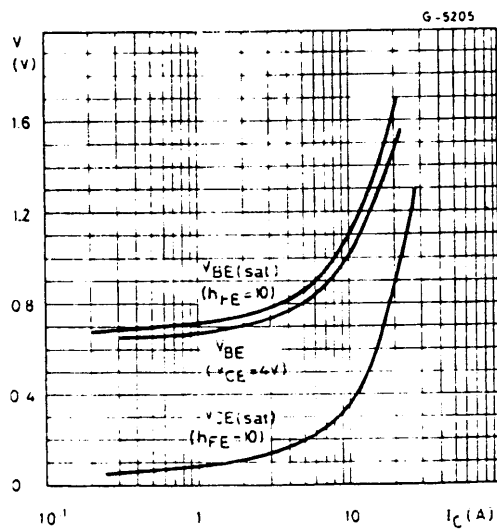
DC Current Gain (PNP type).



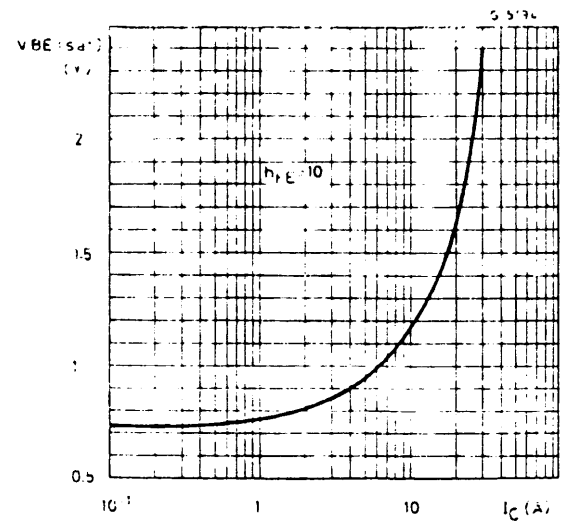
Base-emitter Voltage (PNP type).



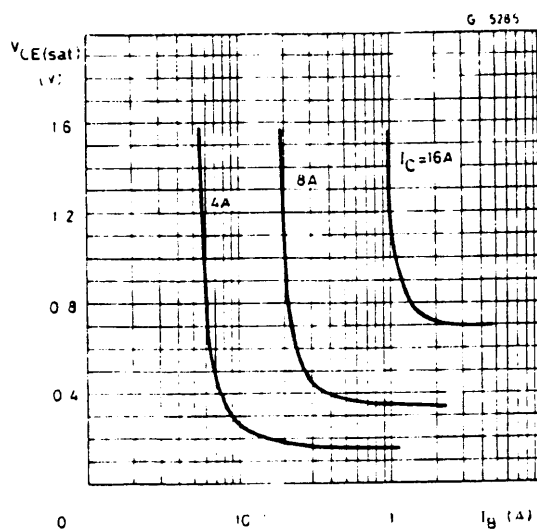
Saturation Voltage (NPN type).



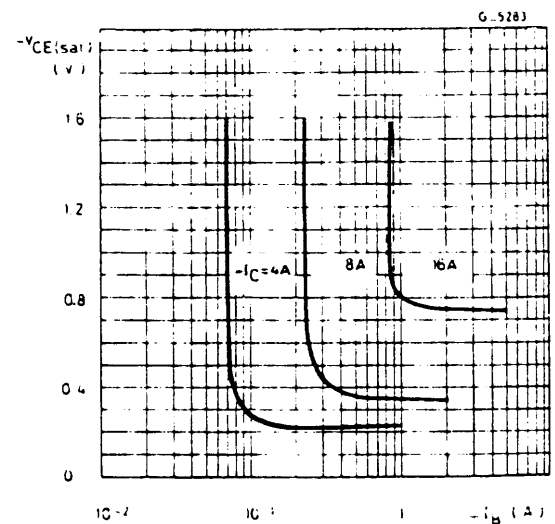
Base emitter Saturation Voltage (PNP type).



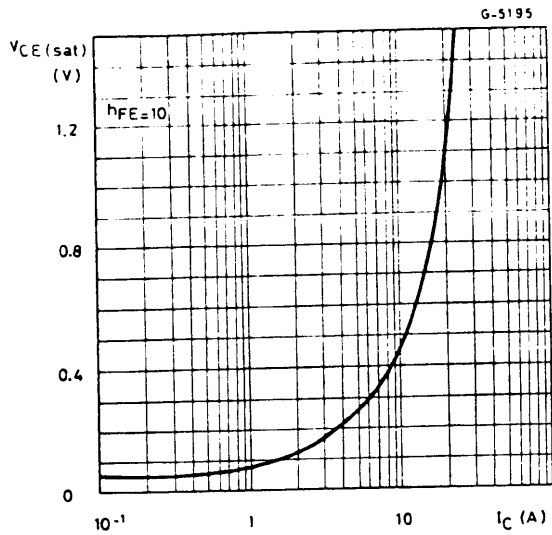
Collector-emitter Saturation Voltage (NPN type).



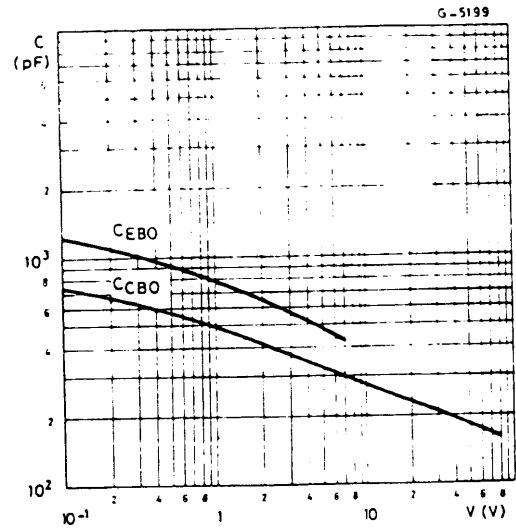
Collector-emitter Saturation Voltage (PNP type).



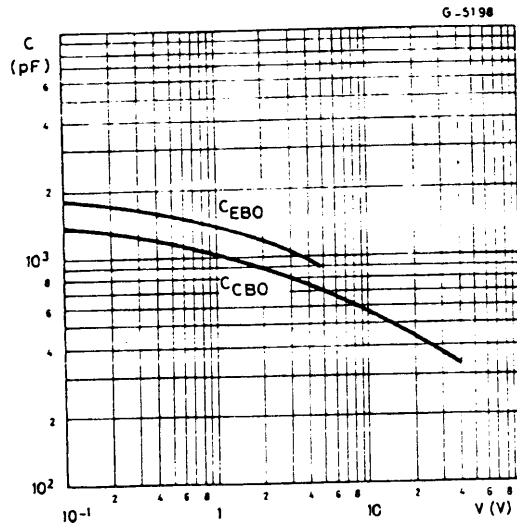
Collector-emitter Saturation Voltage (PNP type).



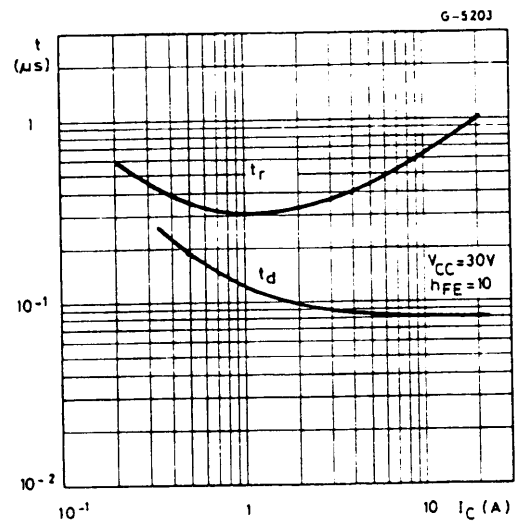
Capacitances (NPN type)



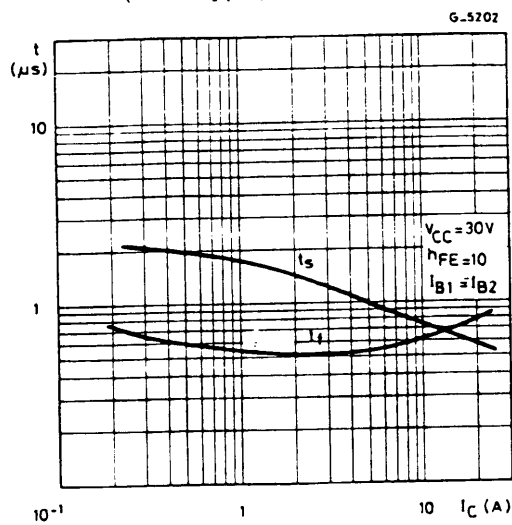
Capacitances (PNP type).



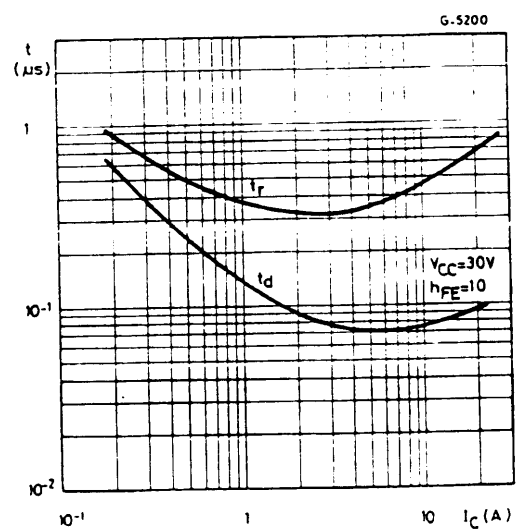
Turn-on Time (NPN type).



Turn-off Time (NPN type).



Turn-on Time (PNP type).



Turn-off Time (PNP type).

